



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,353	06/19/2006	Tim Prestidge	128452	9813
25944 7590 09/29/2008 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
CHANG, SUNRAY				
ART UNIT		PAPER NUMBER		
2121				
MAIL DATE		DELIVERY MODE		
09/29/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,353

Applicant(s)

PRESTIDGE ET AL.

Examiner

Sunray R. Chang

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 20060619
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

P.O. Box 1450, Alexandria, Virginia 22313-1450 - WWW.USPTO.GOV

Examiner's Detailed Office Action

1. This Office Action is responsive to communication, filed on June 19th, 2006.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted to disclose 37 C.F.R. 1.56 all pertinent information and material pertaining to the patentability of applicant's claimed invention, on June 19th, 2006 has been considered by the examiner.

Objection to Amendment

3. The submitted claims filed on October 24th, 2007, which ignored the amended limitations as indicated in the amended claims in the preliminary amendment filed on June 19th, 2006; further failing to provide any indication for any amended limitations, which has been given objections herein.

The examiner has ignored the claims filed on October 24th, 2007, considering them to be non-intentionally amended.

Drawings

4. The drawing filed on October 24th, 2007 has been accepted by the examiner.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. The invention as disclosed in claim(s) 1 – 13 are rejected under 35 U.S.C. § 101 as being non-statutory subject matter. *see In re Comiskey*, Case No. 2006-1286, at 8, 16-21, (Fed. Cir., September 20, 2007). “Only if the requirements of § 101 are satisfied is the inventor allowed to pass through to the other requirements for patentability, such as novelty under § 102 and, non-obviousness under § 103.” “Moreover, ... when an abstract concept has no claimed practical application, it is not patentable.”

Regarding Claim(s) 1 – 13, there is no practical output from the platforms. For example, “identical software functions” and “one or more software functions” are implemented in either “control platform” or “product platform”, which fail to include the function of the software for use on the product, have been treated as software only; there is no practical output to the real world to control or the like.

Claims 1 and 13 claim for a system for performing a workpiece production process and inspection process, however, there is no corresponding output (command/display etc.) for performing a workpiece production process and inspection process.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. **Claim(s) 1 – 13 is/are rejected** under 35 U.S.C. 103(a) as being unpatentable over Dennis H. Locke et al. (U.S. Patent No. 4,974,165, and referred to as **Locke** hereinafter) in view of Lothar F. Bieg et al. (U.S. Patent No. 6,519,860, and referred to as **Bieg** hereinafter).

Regarding claim(s) 1, 10 and 13

Locke teaches,

- A workpiece inspection system comprising a machine tool which has a controller operable to perform a workpiece producing process and a workpiece inspection process, [a real-time machining control system is provided which includes a conventional computer numerical control and a dimensional measurement system which continually measures the actual diameter of the rotating workpiece and provides an error signal representing the difference between the actual diameter of the workpiece and that of the part program. The error signal is used to directly control the movement of the cutting tool to assure the final dimensions of the workpiece, Abstract]

- the inspection process including a method for synchronising varying data relating to measurements of the workpiece from a measurement device with varying data relating to machine position from the machine tool, [continually measures the actual diameter of the rotating workpiece and provides an error signal representing the difference between the actual diameter of the workpiece and that of the part program. The error signal is used to directly control the movement of the cutting tool to assure the final dimensions of the workpiece, Abstract] comprising in any suitable order the steps of:
- mounting the measurement device on the machine tool; [fig. 3]
- changing the position of the workpiece relative to the measurement device; [rotating workpiece, Abstract]
- causing measurements of the workpiece to be taken by the measurement device; [provides an error signal representing the difference between the actual diameter of the workpiece and that of the part program. The error signal is used to directly control the movement of the cutting tool to assure the final dimensions of the workpiece, Abstract]
- issuing synchronisation signals defining a plurality of instants; [feeding data defining a desired profile and dimensions of the workpiece to a computer, producing from the computer a succession of digital signals defining a succession of required cutting tool positions to machine the workpiece to that profile and dimension, continually determining an actual dimension or parameter of the rotating workpiece and deriving an error signal representing the difference between said actual dimension or parameter of the workpiece and that of the part program, and feeding the error signal to means for controlling the movement of the

cutting tool to assure that the final actual machined profile and dimensions of the workpiece conform to the desired part program, col. 2, line 55 – col. 3, line 4]

The examiner further explains, “issuing synchronization signals defining instants” can be a program in a computer system initiating the function of the controlled components.

- recording a first set of the varying data relating to the position of the machine at least at some of the instants; [deriving an error signal representing the difference between said actual dimension or parameter of the workpiece and that of the part program, col. 2, line 55 – col. 3, line 4] and
- recording a second set of the varying data from the measurement device relating to measurements of the workpiece at least at some of the instants. [continually determining an actual dimension or parameter of the rotating workpiece, col. 2, line 55 – col. 3, line 4]

The examiner further explains, “relating”, covers all related data, including the “error” signal is also related with “position of the machine”. The examiner consider this invention is specifically to discuss “position of the machine”, not “related”, thus, the examiner cites another reference as indicated below to continue the prosecution.

Regarding claim 13, “first part”, “second part” related limitations can be found in **Locke** reference fig 1, 3 and 4.

Locke does not teach recording the position of the machine.

Bieg teaches measures the true position of the milling head ... compares the true (real) measured position with the desired, and creates a position error signal ..., col. 20, line 62 – col.

21, line 17; fig. 23], for the purpose of providing independent, real-time position feedback control of a movable machine member [col. 20, line 62 – col. 21, line 17].

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of **Locke** to include "recording the position of the machine", for the purpose of providing independent, real-time position feedback control of a movable machine member, col. 20 [line 62 – col. 21, line 17].

Regarding **claim(s) 2**, **Locke** teaches,

- the synchronisation signal issues from the controller. [feeding data defining a desired profile and dimensions of the workpiece to a computer, producing from the computer a succession of digital signals defining a succession of required cutting tool positions to machine the workpiece to that profile and dimension, continually determining an actual dimension or parameter of the rotating workpiece and deriving an error signal representing the difference between said actual dimension or parameter of the workpiece and that of the part program, and feeding the error signal to means for controlling the movement of the cutting tool to assure that the final actual machined profile and dimensions of the workpiece conform to the desired part program, col. 2, line 55 – col. 3, line 4]

Regarding **claim(s) 3**, **Locke** teaches,

- the synchronisation signal is used to identify the real time at which at least some of the members of the first and second sets of data from the machine tool and measurement device were recorded in order that the position data and the measurement data can be combined with

a related real time. [real-time machining and on-machine inspection system, col. 1, lines 11 – 15; deriving an error signal representing the difference between said actual dimension or parameter of the workpiece and that of the part program, and feeding the error signal to means for controlling the movement of the cutting tool to assure that the final actual machined profile and dimensions of the workpiece conform to the desired part program, col. 2, line 55 – col. 3, line 4]

Regarding **claim(s) 4**, **Locke** teaches,

- the measurement device is monitored at intervals which are more frequent than the occurrences of the said intervals and only selected data is recorded to the second set and/or the data is manipulated prior to its recording. [real-time, [real-time machining and on-machine inspection system, col. 1, lines 11 – 15; deriving an error signal representing the difference between said actual dimension or parameter of the workpiece and that of the part program, and feeding the error signal to means for controlling the movement of the cutting tool to assure that the final actual machined profile and dimensions of the workpiece conform to the desired part program, col. 2, line 55 – col. 3, line 4]

The examiner considers “is monitored” to be “is monitoring”, since the measurement device is used to monitor, not to be monitored; further, “selected data” can be the real-time monitored data.

Regarding **claim(s) 5**, **Locke** teaches,

- software for combining the data of the first and second sets and, when combined, for influencing the workpiece producing process performed at the controller of the machine tool. [deriving an error signal representing the difference between said actual dimension or parameter of the workpiece and that of the part program, ... continually determining an actual dimension or parameter of the rotating workpiece ... feeding the error signal to means for controlling the movement of the cutting tool to assure that the final actual machined profile and dimensions of the workpiece conform to the desired part program, col. 2, line 55 – col. 3, line 4]

The examiner explains, “combining” can be simply generating the error signal.

Regarding **claim(s) 6**, **Locke** teaches,

- an interface circuit which accepts the synchronisation signal and the varying data from the measurement device. [fig. 2]

Regarding **claim(s) 7**, **Locke** teaches,

- a stop signal path from the measurement device to the machine controller and the machine controller stops the machine if a stop signal is received by the machine controller. [shut down the machine, col. 1, lines 57 – 59]

Regarding **claim(s) 8**,

Bieg teaches,

- the measurement device is a contact type dimensional measurement probe and the varying data relates to changes in the deflection of a workpiece contact stylus connected to the probe [ACMM's probe tip can be physically attached to a movable machine member (e.g. a machine tool holder, or end effector of a robotic arm) to provide independent, real-time measurement of the member's position in one, two, or three-dimensional Cartesian space, col. 7, lines 16 – 21], for the purpose of providing independent, real-time position feedback control of a movable machine member, col. 20 [line 62 – col. 21, line 17].

Regarding **claim(s) 9**,

- the first set of data is corrected to at least reduce positional errors of the machine tool, prior to combination with the second set. [deriving an error signal representing the difference between said actual dimension or parameter of the workpiece and that of the part program, ... continually determining an actual dimension or parameter of the rotating workpiece ... feeding the error signal to means for controlling the movement of the cutting tool to assure that the final actual machined profile and dimensions of the workpiece conform to the desired part program, col. 2, line 55 – col. 3, line 4]

Regarding **claim(s) 11**,

- the controller issues a further signal which enables the recording of the second set. [to continually measure the workpiece diameter in real-time and provide dimensional feedback to keep the workpiece diameter within tolerances, col. 2, lines 17 – 20]

Regarding **claim(s) 12**,

Software for controlling a workpiece inspection system according to the steps claimed in claim

1. [part program, col. 2, lines 12 – 20]

Correspondence Information

7. Any inquires concerning this communication or earlier communications from the examiner should be directed to Sunray Chang, who may be reached Monday through Friday, between 6:00 a.m. and 3:00 p.m. EST. or via telephone at (571) 272-3682 or facsimile transmission (571) 273-3682 or email sunray.chang@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

If attempts to reach the examiner are unsuccessful in the regular office hour, the Examiner's Supervisor, Albert Decady, may be reached at (571) 272-3819.

Finally, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Moreover, status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) toll-free @ 1-866-217-9197.

Sunray Chang

U.S. Patent & Trademark Office

/Albert DeCady/
Supervisory Patent Examiner, Art Unit 2121
September 29, 2008
